

# Mineral Industry Surveys

**For information, contact:**

Lisa A. Corathers, Silicon Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4973, Fax: (703) 648-7757  
E-mail: lcorathers@usgs.gov

Lisa D. Miller (Data)  
Telephone: (703) 648-7973  
Fax: (703) 648-7975  
E-mail: millerl@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## SILICON IN FEBRUARY 2004

In February 2004, domestic production of silicon ferroalloys plus metal, excluding silvery pig iron, decreased by 5% compared with revised production figures for ferrosilicon (14,400 metric tons (t) plus silicon metal (11,300 t) in January 2004, according to the U.S. Geological Survey. Domestic shipments of silicon ferroalloys plus metal decreased by 7% compared with revised shipment figures for ferrosilicon (10,800 t) plus silicon metal (12,500 t) in January. Producer stocks of these materials decreased by 4% compared with the revised figures of 21,800 t of ferrosilicon plus 3,500 t of silicon metal in January. All domestic data for ferrosilicon have been combined to avoid disclosing company proprietary data.

The ensuing discussion is based on a comparison of the January 2004 trade data, which are included in this report, to those of December 2003, on a gross weight basis. Ferrosilicon exports increased by 14%, owing to significant increases in both trade categories. Silicon metal exports decreased by 68%, owing primarily to a significant decrease in the "silicon metal, other" trade category. Ferrosilicon imports decreased by 33%, and silicon metal imports increased by 20%. The decrease in ferrosilicon imports was due primarily to a significant decrease in the trade category "ferrosilicon, 55% - 80% silicon, other." The increase in silicon metal imports occurred across all trade categories.

### Prices, cents per pound, silicon content

	<u>50% Ferrosilicon<sup>1</sup></u>	<u>75% Ferrosilicon<sup>2</sup></u>	<u>Silicon Metal<sup>2</sup></u>
<b>February 5</b>	<b>52.0-56.0</b>	<b>48.00-50.00</b>	<b>67.0-70.0</b>
<b>February 12</b>	<b>52.0-56.0</b>	<b>50.00-51.00</b>	<b>69.0-70.5</b>
<b>February 19</b>	<b>52.0-56.0</b>	<b>50.00-52.00</b>	<b>70.0-72.0</b>
<b>February 26</b>	<b>53.0-56.0</b>	<b>50.00-55.00</b>	<b>72.0-75.0</b>

<sup>1</sup>Source: Ryan's Notes, North American transaction price.

<sup>2</sup>Source: Platts Metals Week, dealer import price.

TABLE 1  
U.S. PRODUCTION, SHIPMENTS, AND PRODUCER STOCKS OF SILICON ALLOYS AND METAL IN 2004<sup>1, 2, 3</sup>

(Metric tons)

Material	Gross production <sup>4</sup>		Net shipments		Stocks, February 29
	February	Year to date <sup>5</sup>	February	Year to date <sup>5</sup>	
Ferrosilicon, all grades <sup>6, 7</sup>	13,100	27,500	10,900	21,600	20,900
Silicon metal, excludes semiconductor grades	11,200	22,600	10,800	23,200	3,240

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>Includes U.S. Geological Survey estimates.

<sup>3</sup>Data for silvery pig iron (less than 25% silicon) withheld to avoid disclosing company proprietary data.

<sup>4</sup>Includes in-plant consumption, as in production of magnesium ferrosilicon and other miscellaneous alloys.

<sup>5</sup>Includes revisions to previous months' data.

<sup>6</sup>Ferrosilicon categories were aggregated to avoid disclosing company proprietary data.

<sup>7</sup>Includes miscellaneous silicon alloys.

TABLE 2  
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN JANUARY 2004<sup>1, 2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	Year to date		
				Gross weight	Contained weight	Value
Ferrosilicon:						
More than 55% silicon:						
Canada	270	162	\$212,000	270	162	\$212,000
Mexico	100	63	96,900	100	63	96,900
Total	370	225	309,000	370	225	309,000
Other ferrosilicon:						
Canada	280	140	302,000	280	140	302,000
Mexico	133	66	143,000	133	66	143,000
Total	414	207	445,000	414	207	445,000
Total ferrosilicon	784	432	754,000	784	432	754,000
Metal:						
More than 99.99% silicon:						
China	129	XX	3,370,000	129	XX	3,370,000
Denmark	9	XX	546,000	9	XX	546,000
France	41	XX	971,000	41	XX	971,000
Germany	61	XX	2,200,000	61	XX	2,200,000
Italy	14	XX	929,000	14	XX	929,000
Japan	579	XX	21,900,000	579	XX	21,900,000
Korea, Republic of	50	XX	2,990,000	50	XX	2,990,000
Malaysia	5	XX	896,000	5	XX	896,000
Taiwan	13	XX	561,000	13	XX	561,000
United Kingdom	17	XX	1,480,000	17	XX	1,480,000
Other (13 countries)	16	XX	995,000	16	XX	995,000
Total	935	935 <sup>e</sup>	36,800,000	935	935 <sup>e</sup>	36,800,000
99.00% - 99.99% silicon:						
Brazil	6	6	12,000	6	6	12,000
Colombia	85	84	120,000	85	84	120,000
Japan	15	15	12,900	15	15	12,900
Korea, Republic of	4	4	44,000	4	4	44,000
Total	110	109	189,000	110	109	189,000

See footnotes at end of table.

TABLE 2--Continued  
U.S. EXPORTS OF FERROSILICON AND SILICON METAL IN JANUARY 2004<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	Year to date		
				Gross weight	Contained weight	Value
Metal--Continued:						
Other silicon:						
Canada	3	3	\$6,030	3	3	\$6,030
Colombia	(3)	(3)	4,760	(3)	(3)	4,760
Germany	4	4	5,000	4	4	5,000
Japan	119	116	157,000	119	116	157,000
Mexico	20	19	105,000	20	19	105,000
Netherlands	121	117	570,000	121	117	570,000
Norway	14	14	18,600	14	14	18,600
Panama	1	1	3,310	1	1	3,310
Total	282	274	870,000	282	274	870,000
Total silicon metal	1,330	1,320	37,900,000	1,330	1,320	37,900,000

<sup>c</sup>Estimated. XX Not applicable. -- Zero.

<sup>1</sup>Presentation of monthly data is based on the year-to-date quantities (gross weight) of the top 10 countries.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF FERROSILICON AND SILICON METAL IN JANUARY 2004<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	Year to date		
				Gross weight	Contained weight	Value
Ferrosilicon:						
55% - 80% silicon, over 3% Ca, Brazil	38	23	\$40,000	38	23	\$40,000
55% - 80% silicon, Other:						
Brazil	143	106	99,500	143	106	99,500
Canada	1,400	1,040	992,000	1,400	1,040	992,000
China	14,000	10,500	8,510,000	14,000	10,500	8,510,000
France	72	46	146,000	72	46	146,000
Germany	68	48	222,000	68	48	222,000
Norway	490	361	644,000	490	361	644,000
Venezuela	2,780	2,140	1,840,000	2,780	2,140	1,840,000
Total	18,900	14,300	12,500,000	18,900	14,300	12,500,000
80% - 90% silicon, Canada	18	14	9,430	18	14	9,430
Magnesium ferrosilicon:						
Argentina	140	63	114,000	140	63	114,000
Brazil	264	118	195,000	264	118	195,000
China	1,640	741	1,130,000	1,640	741	1,130,000
India	19	14	21,000	19	14	21,000
Japan	15	6	36,200	15	6	36,200
Norway	911	396	718,000	911	396	718,000
South Africa	1	(3)	10,500	1	(3)	10,500
Total	2,990	1,340	2,230,000	2,990	1,340	2,230,000
Other ferrosilicon:						
Brazil	107	41	94,600	107	41	94,600
Canada	847	239	564,000	847	239	564,000
China	60	31	106,000	60	31	106,000
Total	1,020	310	764,000	1,020	310	764,000
Total ferrosilicon	23,000	16,000	15,500,000	23,000	16,000	15,500,000

See footnotes at end of table.

TABLE 3--Continued  
U.S. IMPORTS FOR CONSUMPTION OF FERROSILICON AND SILICON METAL IN JANUARY 2004<sup>1,2</sup>

(Metric tons, unless otherwise specified)

Country	Gross weight	Contained weight	Value	Year to date		
				Gross weight	Contained weight	Value
Metal:						
More than 99.99% silicon:						
China	(3)	XX	\$7,750	(3)	XX	\$7,750
Denmark	(3)	XX	3,000	(3)	XX	3,000
Germany	31	XX	4,390,000	31	XX	4,390,000
Ireland	1	XX	4,890	1	XX	4,890
Italy	70	XX	1,850,000	70	XX	1,850,000
Japan	16	XX	841,000	16	XX	841,000
Korea, Republic of	5	XX	57,200	5	XX	57,200
Spain	2	XX	6,120	2	XX	6,120
Taiwan	8	XX	83,400	8	XX	83,400
Ukraine	(3)	XX	2,420	(3)	XX	2,420
Total	131	131 <sup>e</sup>	7,250,000	131	131 <sup>e</sup>	7,250,000
99.00% - 99.99% silicon:						
Australia	90	89	98,300	90	89	98,300
Brazil	4,700	4,660	5,470,000	4,700	4,660	5,470,000
Canada	1,770	1,760	2,310,000	1,770	1,760	2,310,000
France	20	20	16,800	20	20	16,800
Norway	517	510	979,000	517	510	979,000
South Africa	1,330	1,320	1,520,000	1,330	1,320	1,520,000
Sweden	10	10	73,600	10	10	73,600
Total	8,440	8,370	10,500,000	8,440	8,370	10,500,000
Other silicon:						
Brazil	614	608	697,000	614	608	697,000
Canada	141	138	189,000	141	138	189,000
China	390	384	387,000	390	384	387,000
France	20	20	16,600	20	20	16,600
Japan	(3)	(3)	7,170	(3)	(3)	7,170
Korea, Republic of	11	(3)	11,600	11	(3)	11,600
South Africa	595	585	474,000	595	585	474,000
Ukraine	137	134	150,000	137	134	150,000
United Kingdom	18	18	29,900	18	18	29,900
Total	1,930	1,890	1,960,000	1,930	1,890	1,960,000
Total silicon metal	10,500	10,400	19,700,000	10,500	10,400	19,700,000

<sup>e</sup>Estimated. XX Not applicable. -- Zero.

<sup>1</sup>Presentation of monthly data is based on the year-to-date quantities (gross weight) of the top 10 countries.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.